

CLAIMS

1. A tire monitoring system comprising sensors, each of which is provided for each of the tires equipped to a vehicle and detects conditions of the tire and wirelessly sends the detected result, and a monitor with a monitor receiver, which receives the detected result sent from each of said sensors, for monitoring conditions of each of said tires on the basis of said detected result received by the monitor receiver;

wherein at least either said sensor or said monitor comprises: a storage unit for storing more than two types of transmission method information for a data communication between said sensor and said monitor; and

switch means for selecting one type of transmission method information from said stored transmission method information and setting a data communication with a transmission method on the basis of the selected transmission method information available.

2. The tire monitoring system according to claim 1, comprising means for carrying out a data communication by using radio waves between said sensors and said monitor,

wherein said switch means has means for switching frequencies of radio waves used in said data communication.

3. The tire monitoring system according to claim 1, wherein said transmission method information comprises at least one type of information of communication protocol information, modulation method information, and demodulation method information.

4. The tire monitoring system according to claim 1, wherein said

transmission method information comprises data transfer bit rate information and transferred data format information.

5. The tire monitoring system according to claim 1, wherein said monitor is provided inside said vehicle.

6. The tire monitoring system according to claim 1, wherein said sensor comprises means for detecting an air pressure in a tire and sending the detected result.

7. A monitor receiver in a tire monitoring system comprising sensors, each of which is provided for each of the tires equipped to a vehicle and detects conditions of the tire and wirelessly sends the detected result, and a monitor with said monitor receiver, which receives the detected result sent from each of said sensors, for monitoring conditions of said tires on the basis of said detected result received by the monitor receiver; wherein said monitor receiver comprises:

a storage unit for storing more than two types of transmission method information for a data communication with said sensors; and

switch means for selecting one type of transmission method information from said stored transmission method information and setting a data communication with a transmission method on the basis of the selected transmission method information available.

8. The monitor receiver in the tire monitoring system according to claim 7, comprising means for carrying out a data communication by using radio waves with said sensors,

wherein said switch means has means for switching frequencies of radio waves used in said data communication.

9. The monitor receiver in the tire monitoring system according to claim 7, wherein said transmission method information comprises at least either communication protocol information or demodulation method information.

10. The monitor receiver in the tire monitoring system according to claim 7, wherein said transmission method information comprises data transfer bit rate information and transferred data format information.

11. The monitor receiver in the tire monitoring system according to claim 7, wherein said switch means comprises means for selecting one type of transmission method information from said more than two types of transmission method information and setting a data communication with a transmission method based on the selected transmission method information available, individually for each of the sensors.

12. The monitor receiver in the tire monitoring system according to claim 7, comprising communication means for carrying out a data communication in a time sharing method with each of said sensors, wherein said switch means comprises means for setting one of said transmission methods available individually for a transmission time for each of said time-sharing sensors.

13. The monitor receiver in the tire monitoring system according to claim 7, wherein said switch means comprises:
a control unit for setting a data communication with a transmission method on the basis of transmission method information stored in said storage unit available;

means for receiving data sent from said sensor with any of more than two types of demodulation methods on the basis of an instruction from said control unit; and

a switch for switching said control unit to the default state when a sensor is changed,

wherein said control unit comprises means for receiving data sent from said sensor by switching said more than two demodulation methods one after the other in said default state and for setting a transmission method available by automatically determining a transmission method corresponding to said sensor on the basis of predetermined information in the received data.

14. The monitor receiver in the tire monitoring system according to claim 13,

wherein said storage unit stores information representing the type of a sensor and transmission method information in sensor's own identification information sent by the sensor in association with each other,

wherein said control unit comprises means for automatically determining a transmission method corresponding to said sensor on the basis of sensor's identification information included in data received from said sensor.

15. The monitor receiver in the tire monitoring system according to claim 13, comprising at least two or more of amplitude modulation (AM), amplitude shift keying (ASK), frequency modulation (FM), frequency shift keying (FSK), phase modulation (PM) and phase shift keying (PSK) as said demodulation method.

16. The monitor receiver in the tire monitoring system according to claim 7, comprising means for displaying at least a part of data received from said sensor.

17. A monitor of a tire monitoring system comprising sensors, each of which is provided for each of the tires equipped to a vehicle and detects conditions of the tire and wirelessly sends the detected result, and a monitor with a monitor receiver, which receives the detected result sent from each of said sensors, for monitoring conditions of said tires on the basis of said detected result received by the monitor receiver,

wherein said monitor comprises a monitor receiver according to any of claims 7 to 16.

18. The monitor of the tire monitoring system according to claim 17, comprising means for requesting from said sensor to send said detected result.

19. A sensor of a tire monitoring system comprising sensors, each of which is provided for each of the tires equipped to a vehicle and detects conditions of the tire and wirelessly sends the detected result, and a monitor with a monitor receiver, which receives the detected result sent from each of said sensors, for monitoring conditions of said tires on the basis of said detected result received by the monitor receiver, wherein said sensors comprises:

a storage unit for storing more than two types of transmission method information for a data communication with said monitor; and
switch means for selecting one type of transmission method information from transmission method information stored in said

storage unit and setting a data communication with a transmission method on the basis of the selected transmission method information available.

20. The sensor of the tire monitoring system according to claim 19, comprising means for carrying out a data communication with said monitor by using radio waves.

21. The sensor of the tire monitoring system according to claim 19, wherein said transmission method information comprises at least either communication protocol information or modulation method information.

22. The sensor of the tire monitoring system according to claim 19, wherein said transmission method information comprises data transfer bit rate information and transferred data format information.

23. The sensor of the tire monitoring system according to claim 19, comprising means for detecting an air pressure in a tire and sending the detected result.